

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

In the Matter of	)	
	)	
	)	
Reallocation and Service Rules for	)	GN Docket No. 01-74
the 698-746 MHz Spectrum Band	)	
(Television Channels 52-59)	)	
	)	

To: The Commission

**COMMENTS IN SUPPORT OF  
PETITION FOR RECONSIDERATION**

Pegasus Guard Band, LLC (“PGB”), by its counsel and pursuant to Section 1.429 of the Commission’s Rules, 47 C.F.R. § 1.429, hereby submits comments in support of the Petition for Reconsideration (“Petition”) submitted by Access Spectrum, LLC (“Access Spectrum”) in the above-captioned proceeding.<sup>1</sup> By its Petition, Access Spectrum seeks reconsideration of the Commission’s Report and Order (the “52-59 Order”) reallocating television channels 52-59 and establishing licensing rules for the future use of that spectrum.<sup>2</sup> Specifically, Access Spectrum seeks reconsideration of the Commission’s decision authorizing new licensees in the reallocated Lower 700 MHz spectrum to operate base station transmitters on channels 57-59 with power

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<sup>1</sup> Petition for Reconsideration of the Commission’s Order In the Matter of Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), GN Docket No. 01-74, Access Spectrum, LLC (submitted March 8, 2002).

<sup>2</sup> In the Matter of Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), Report and Order, GN Docket No. 01-74, FCC 01-364, released January 18, 2002 (hereinafter “52-59 Order”).

levels of up to 50 kW effective radiated power (“ERP”). PGB, as a licensee in the adjacent 700 MHz Guard Band, shares Access Spectrum’s concerns regarding the potential for harmful interference to the 700 MHz Guard Bands. By the instant comments, PGB urges the Commission to adopt the changes proposed by Access Spectrum and modify its *52-59 Order* in order to avoid the negative impact that this decision could have on the productive use of the 700 MHz Guard Bands. As described below, the service rules adopted in the *52-59 Order* for commercial operations in the Lower 700 MHz are insufficient to protect commercial services operating in the A Block Guard Band. Accordingly, the Commission should reconsider its *52-59 Order* with respect to the following areas: (a) designated use on channels 57-59; (b) base station effective radiated power on channels 57-59; (c) out-of-band emission limitation and interference mitigation measures.

## **BACKGROUND**

### **Pegasus Guard Band, LLC**

PGB is the licensee and spectrum manager of 34 licenses in the 700 MHz Guard Band spectrum, and has paid the FCC an aggregate sum of approximately \$95.4 million at auction to secure these authorizations. Of PGB’s 34 guard band licenses, 32 are designated as A Block licenses, consisting of a pair of 1 MHz guard band frequencies for a total of 2 MHz.<sup>3</sup> The A Block guard band spectrum is allocated for commercial use and is located between 746-747 MHz and 776-777 MHz. Along with the B Block guard bands, the A Block guard bands serve to protect the portions of the 700 MHz spectrum reallocated for public safety use from those portions reallocated for commercial use. PGB holds the A Block guard band licenses for a

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<sup>3</sup> PGB’s remaining two licenses are B Block Guard Band licenses of 4 MHz, consisting of a pair of 2 MHz guard band frequencies.

number of major economic areas in the United States, including Boston, Chicago, Detroit, New York City, Philadelphia, Pittsburgh, Portland, San Francisco/Oakland and Seattle.

### **700 MHz Band Plan**

In reallocating the 700 MHz band from its current usage for television broadcasting to future operations, the Commission divided the spectrum into the Upper 700 MHz Band and the Lower 700 MHz Band. The Upper 700 MHz Band occupies television channels 60-69 located between 746-806 MHz, and the Lower 700 MHz Band occupies television channels 52-59 located between 698-746 MHz.

#### *Upper 700 MHz Spectrum*

At the direction of Congress, the Commission reallocated 24 MHz of spectrum in the Upper 700 MHz band for public safety use, and 36 MHz of spectrum for commercial use including fixed, mobile, and broadcasting services. Six of the 36 MHz established for commercial use in the Upper 700 MHz were designated as Guard Bands in order to provide protection to the adjacent public safety users. Thus, the public safety spectrum located between 764-776 MHz and 794-806 MHz is buffered by the A Block guard bands, consisting of a pair of 1 Mhz segments between 746-747 MHz and 776-777 MHz, and the B Block guard bands, consisting of a pair of 2 MHz segments between 762-764 MHz and 792-794 MHz. The public safety operations in the Upper 700 MHz are further protected by stringent out-of-band emissions limits, frequency coordination between users, and a limitation of 1 kW ERP for base stations transmitting in the surrounding blocks of commercial spectrum. Pursuant to auctions concluded in September 2000, and February 2001, the Commission awarded licenses for the 700 MHz Guard Bands to PGB, Access Spectrum, Nextel Communications, Inc., and others in exchange for a total of over \$500 million.

### Lower 700 MHz Spectrum

The Lower 700 MHz Band consists of 48 MHz of spectrum located between 698-746 MHz and has been allocated entirely for commercial use. By its *52-59 Order* in the above-captioned proceeding, the Commission reallocated the Lower 700 MHz Band by dividing the band into three 12 MHz blocks of paired spectrum, consisting of a pair of 6 MHz segments, and two unpaired blocks of 6 MHz each. As mentioned above, the Lower and Upper 700 MHz bands are contiguous, resulting in adjacent channel service allocations with vastly different power and usage designations that will create a high probability of interference. Of particular interest and concern to PGB are the three 12 MHz blocks of paired spectrum in the Lower 700 MHz band. These three Blocks, designated as the A, B, and C Blocks, respectively, are as follows: A Block license, consisting of former TV Channels 52 and 57; B Block license consisting of former Channels 53 and 58; and C Block license consisting of former Channels 54 and 59. Thus, the upper 6 MHz segment of the C Block license (channel 59, 740-746 MHz) is contiguous with the lower 1 MHz segment of PGB's A Block 700 MHz guard band licenses at 746-747 MHz.

### 700 MHz Guard Band Managers

By the allocation of the 700 MHz Guard Bands, the Commission introduced the license category of "guard band manager" for the first time.<sup>4</sup> The guard band manager concept seeks to promote the efficient use of spectrum and compatible coexistence through extensive coordination with other users and public safety frequency coordinators.<sup>5</sup> The 700 MHz guard band managers are responsible for ensuring that all entities operating in the guard bands are in compliance with technical regulations, in order to protect public safety systems operating in the Upper 700 MHz

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<sup>4</sup> Service Rules for the 746-746 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, Second Report and Order, 15 FCC Rcd 5299 (2000) at ¶ 26.

from harmful interference. The lower portion of the A Block guard band (746-747 MHz) is designated principally for base transmitters, and the upper portion (776-777) principally for mobile and portable stations.<sup>6</sup> It is anticipated that the majority of commercial applications using the A Block Guard Bands will be transmitting to portable or mobile receivers operating in 746-747 MHz.

## **DISCUSSION**

As detailed in Access Spectrum's Petition for Reconsideration, the Commission seems to have ignored the existence of the 700 MHz guard band licenses authorized to operate in the adjacent Upper 700 MHz when it established the service and technical rules for the reallocated commercial spectrum in the Lower 700 MHz. By permitting commercial operations on former TV channels 57-59 with power levels of up to 50 kW ERP, the Commission's *52-59 Order* threatens the viability of commercial operations on the adjacent guard bands. In particular, future operations by commercial users in the Lower 700 MHz C Block licenses, transmitting on former TV Channel 59, will have a potentially profound negative impact on PGB's guard band licenses operating on former TV Channel 60. Accordingly, the Commission must reconsider its technical rules governing operations on Channels 57-59 in order to ensure the continued viability of the A Block guard bands.

By its *52-59 Order*, the Commission authorizes future licensees of the Lower 700 MHz A, B, and C spectrum blocks to use either the lower or upper segments of their licenses for base transmit operations. In addition, the *52-59 Order* permits all base and fixed stations in the Lower

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Footnote continued from previous page

<sup>5</sup> Id. at ¶¶ 26-35.

<sup>6</sup> Id. at ¶100.

700 MHz spectrum to operate with a maximum power level of 50 kW.<sup>7</sup> Although the 52-59 Order imposes several measures aimed at limiting interference from high power base stations operating in the Lower 700 Band, these measures are wholly insufficient to protect portable and mobile receivers in the Upper 700 MHz Guard Bands. Among the measures instituted by the 52-59 Order are: (1) a power flux density (PFD) standard designed to ensure that base stations operating with an ERP of greater than 1 kW do not in fact produce PFD levels greater than a station operating below 1 kW ERP; (2) adjustments to adjacent base stations such as antenna selection, tilting, and filtering; and (3) notification to adjacent users before commencing operations with a power of greater than 1 kW ERP.<sup>8</sup> As pointed out by Access Spectrum, however, the Commission's interference protection measures are all aimed at preventing base transmitter-to-base transmitter interference between users in the Lower 700 MHz spectrum. Importantly, the measures instituted by the Commission do not consider, nor do they provide adequate protection to, mobile and/or portable receivers in the adjacent 746-777 MHz guard band. Thus, licensees operating in the adjacent 700 MHz Guard Bands, such as PGB, stand to receive severe interference from high-powered transmitters operating on former TV Channel 59.

In addition, the Commission adopted an out-of-band emissions limit for the Lower 700 MHz that is the same as the level permitted in the commercial portions of the Upper 700 MHz, despite the fact that the Lower 700 MHz base stations will employ power levels 50 times as great.<sup>9</sup> At the same time that 700 MHz Guard Band licensees must comply with severe

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<sup>7</sup> 52-59 Order at ¶¶ 102-107.

<sup>8</sup> 52-59 Order at ¶¶ 99-123.

<sup>9</sup> 52-59 Order at ¶¶ 122-123.

restrictions on their operations, the Commission has failed to institute reciprocal restrictions on adjacent commercial users in the Lower 700 MHz.

PGB has invested in excess of \$95 million to purchase A Block 700 MHz guard band licenses for 32 major economic areas. In order to preserve the value and viability of implementing commercial operations in this spectrum under the rules established for the guard band spectrum, PGB supports the recommendations made by Access Spectrum for modifying the rules governing the Lower 700 MHz spectrum.

First, the Commission should require licensees of A, B, and C Blocks in the Lower 700 MHz to use the lower segment blocks of the paired 12 MHz principally for base transmit operations, with a maximum 50 kW ERP, and utilize the upper segment blocks primarily for receive operations. Thus, fixed and base transmitters would be permitted to operate on the Channels 52, 53, and 54, thereby providing Lower 700 MHz licensees with the desired 50 kW power level, while simultaneously protecting adjacent users from almost certain severe interference from high-powered transmitters. Adopting this change will preserve the commercial service viability of the A Block guard band for portable and mobile receiver operations. Similarly, it will still enable new licensees in the Lower 700 MHz to operate at power levels up to 50 kW ERP and be able to support a variety of new services.

Similarly, the Commission should prohibit high power base and fixed transmitter operations on channels 57-59. This change will allow new commercial services the flexibility to use the unpaired blocks for base station transmit and afford limited protection to A Block guard band receivers from adjacent channel interference and out-of-band emissions that could produce severe interference. Moreover, restricting Channels 57-59 to use for mobile and portable transmissions would provide parity with the A Block 746-747 MHz guard band designation,

thereby reducing the potential for interference to mobile-to-mobile occurrences. Mobile-to-mobile interference is much less likely to occur than interference from a base transmitter. In addition, mobile-to-mobile interference will generally be of a much shorter duration if it does occur.

Third, the out-of-band emission limitation established by the *52-59 Order* is insufficient to protect operations in the A Block guard band from harmful interference caused by high-powered transmitters operating on Channels 57-59. Should the Commission fail to adopt the proposals discussed above to restrict high-powered base station transmitters to Channels 52-54, it should at the very least increase the limitation on out-of-band emissions imposed on licensees in the Lower 700 MHz band. Requiring Lower 700 MHz licensees operating with 50 kW ERP to adhere to the out-of-band emission levels originally established for 1 kW ERP transmitters will not adequately protect commercial services in the Upper 700 MHz.

## **CONCLUSION**

As a guard band manager, Pegasus Guard Band, LLC seeks to manage the 700 MHz Guard Bands in the spirit in which they were created -- promoting efficient spectrum coordination and operation on a non-interference basis. The modification of the Commission's rules proposed by Access Spectrum's Petition for Reconsideration is intended to prevent harmful interference to services operating in the 700 MHz Guard Bands, while at the same time preserving the basic service nature of the Lower 700 MHz band. Commercial, industrial, and private services operating in the Guard Bands will provide mission-critical communications support for business and life safety applications. Assurance for non-interfering, peaceful



coexistence between adjacent systems is vital to our nation's commercial communications infrastructure.

Moreover, the increasing amount of harmful interference experienced in the 800 MHz spectrum should serve as a caveat to the Commission as it establishes the rules that will govern the reallocated 700 MHz spectrum. Currently, the 800 MHz contains a number of different types of users, including public safety, private wireless, and commercial mobile radio service (CMRS). These various services are interwoven throughout the spectrum band and are increasingly causing harmful interference to one another. Accordingly, the Commission recently adopted a Notice of Proposed Rule Making seeking comments on various proposals to alleviate this interference, including a radical reconfiguration of the 800 MHz spectrum.<sup>10</sup> PGB encourages the Commission to apply the hindsight gained by the lessons of the 800 MHz in order to better formulate a band plan for the 700 MHz that fosters harmonious usage by different services and which reduces the possibility for harmful interference. The value of spectrum is greatly enhanced when planning is applied to mitigate harmful interference at the on-set. All users of the 700 MHz band share common issues of encumbrances and significant investments; Access Spectrum's Petition for Reconsideration has provided the Commission with an opportunity to

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<sup>10</sup> In the Matter of Improving Public Safety Communications in the 800 MHz Band, Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, Notice of Proposed Rule Making, WT Docket No. 02-55, FCC 02-81 (released March 15, 2002).

implement changes in order prevent an unwanted common interference problem. Accordingly, PGB urges the Commission adopt the proposal presented by Access Spectrum, and amend its rules to adopt the protections requested therein.

Respectfully submitted,

**PEGASUS GUARD BAND, LLC**

*/s/ Brendan Holland*

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Date: March 25, 2002

***CERTIFICATE OF SERVICE***

I, Rhea Lytle, a secretary in the law firm of Shaw Pittman LLP, do hereby certify that true copies of the foregoing “**COMMENTS IN SUPPORT OF PETITION FOR RECONSIDERATION**” were sent via U.S. Mail this 25th day of March, 2002, to the following:

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